

WO 03/072799

PCT/US03/05186

Fig. 1A

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ACCCTCCACTCTCGCGCCAGCCCGGCGGCGGCGGCTGTGGGCTGCAGCACGCGGTGCAC	60
GAGGCAGAGCCACAAGCCAAAGACGGAGTGGGCGGAGCATTCCGGCCACGCCTTCCGCGG	120
CCAAGTCAATTATGGCAGCCACTGAGATCTCTGTCTTTCTGAGCAATTCACCAAGATCAA	180
AGAATCTCGAGTTGATGCGGAAAAAGGCCTGAAGGAGGAGGAAAAAGACGGAGTGTGCAG	240
AGAGAAAGACCATCGGAGCCCTAGTGAGTTGGAGGCCGAGCGTACCTCTGGGGCCTTCCA	300
GGACAGCGTCTTGGAGGAAGAAGTGGAGCTGGTGTGGCCCCCTCGGAGGAGAGCGAGAA	360
GTACATCCTGACCCTGCAGACGGTGCACCTTCACTTCTGAAGCTGTGGAGTTGCAGGATAT	420
GAGCTTGCTGAGCATACAGCAGCAAGAAGGGGTGCAGGTGGTGGTGCACAGCCTGGCCC	480
TGGGTTGCTGTGGCTTGAGGAAGGGCCCCGGCAGAGCCTGCAGCAGTGTGTGGCCATTAG	540
TATCCAGCAAGAGCTGTACTCCCCGCAAGAGATGGAGGTGTTGCAGTTCCACGCTCTAGA	600
GGAGAATGTGATGGTGGCCAGTGAAGACAGTAAGTTAGCGGTGAGCCTGGCTGAAACTGC	660
TGGACTGATCAAGCTCGAGGAAGAGCAGGAGAAGAACCAGTTATTGGCTGAAAGAACAAA	720
GGAGCAGCTCTTTTTTGTGGAACAATGTCAGGAGATGAAAGAAGTGACGAAATTGTCT	780
CACAGTTTCAAATTCAAATGTGGAAGAACAGAGGATCAACCTACAGCTGGTCAAGCAGA	840
TGCTGAAAAGGCCAAATCTACAAAAAATCAAAGAAAGACAAAGGGAGCAAAGGAACCTT	900
CCACTGTGATGTCTGCATGTTACCTCTTCTAGAATGTCAAGTTTTAATCGTCATATGAA	960
AACTCACACCAGTGAGAAGCCTCACCTGTGTACCTCTGCCTGAAAACCTTCCGTACGGT	1020
CACTCTGCTGCGGAACCATGTTAACACCCACACAGGAACCAGGCCCTACAAGTGTAACGA	1080
CTGCAACATGGCATTGTGTACACAGTGGAGAACTCGTCCGACACAGGCGCTATAAACATAC	1140
TCATGAGAAACCTTTAAATGTTCCATGTGCAAGTATGCCAGTGTGGAGGCAAGTAAATT	1200
GAAGCGCCATGTCCGATCCCACACTGGGGAGCGCCCCCTTTCACTGTTGCCAGTGCAGCTA	1260
TGCCAGCAGAGATACCTACAAGCTGAAACGCCACATGAGAACGCACCTCAGGTGAGAAGCC	1320
TTACGAATGCCACATCTGCCACACCCGCTTCAACCCAGAGCGGGACCATGAAAATACATAT	1380
TCTGCAGAAACACGGCGAAAATGTCCCCAAATACCAGTGTCCCATTTGTGCCACCATCAT	1440
TGCACGGAAAAGCGACCTACGTGTGCATATGCCGCAACTTGCATGCTTACAGCGCTGCAGA	1500
GCTGAAATGCCGCTACTGTTCTGCTGTCTTCCATGAACGCTATGCCCTCATTGACACCA	1560
GAAAACTCATAAGAATGAGAAGAGGTTCAAGTGCAAACACTGCAGTTATGCCTGCAAGCA	1620
GGAACGTCAATATGACCGCTCACATTTCGTACCCACACTGGAGAGAAACCATTTCACCTGCCT	1680
TTCTTGCAATAAATGTTTCCGACAGAAGCAACTTCTAAACGCTCACTTCAGGAAATACCA	1740
CGATGCAAATTTTCATCCCGACTGTTTACAAATGCTCCAAGTGTGGCAAAGGCTTTCCCG	1800
CTGGATTAACCTGCACAGACATTTCGGAGAGTGTGGATCAGGGGAAGCAAAGTCGGCTGC	1860
TTCAGGAAAGGGAAGAAGAACAAGAAAGAGGAAGCAGACCATCCTGAAGGAAGCCACAAA	1920
GGGTGAGAAGGAAGCTGCGAAGGGATGGAAGGAAGCCGCGAACGGAGACGAAGCTGCTGC	1980
TGAGGAGGCTTCCACCACGAAGGGAGAACAGTTCACAGGAGAGATGTTTCTGTGCGCTG	2040
CAGAGAAACCACAGCCAGAGTCAAAGAGGAAGTGGATGAAGGCGTGACCTGTGAAATGCT	2100
CCTCAACACGATGGATAAGTGAGAGGGATTCCGGTTGCGTGTTCCTGCCCCCAATTCT	2160
AAAGCAAGTTAGAAGTTTTTAGCATTTAAGGTGTGAAATGCTCCTCAACACGATGGATAA	2220
GTGAGAGAGGTCAGGTTGCATGTTCACTGCCCCTAATTCTTAAAGCAAGTTAGAAATTT	2280
TGATCATTTTCTTTGAAACAATTAAGTTTCATGACAATGGATGACACAAGTTTGAGGTAGT	2340
GTCTAGAATTGTTTCTCCTGTTTGTAGCTGGATATTTCAAAGAAACATTGCAGGTATTTTA	2400
TAAAAGTTTAAACCTTGAATGAGAGGGTAACACCTCAAACCTATGGATTCACTTCTTG	2460
ATATTGGCAAGGTGGCCCAATGAGTGAGTAGTGATTTTTGGATATTTCAAATAGTCT	2520
AGACCAGCTAGTGCTTCCACAGTCAAAGCTGGACATTTTTATGTTGCATTATATACACCC	2580
ATGATATTTCTAATAATATATGGTTTTAAACATTAAAGACAAATGTTTTTATACAAATGA	2640
ATTTTCTACAAAATTTAAAGCTACCATAATGCTTTTAATTAGTTCTAAATTCAACCAAAA	2700
AATGTTTTACTCTTATAAAAAGGAAAACTGAGTAGGAAATGAAATACTAGATTAGACTAG	2760
AAAATAAGGAATAAATCGATTTTACTTTGGTATAGGAGCAAGGTTACCTTTAGATTTTT	2820
GTATTCTCTTTTAATTATGCTCCTTGGCAGGTATGAAATTGCCCTGGTTACATTCCATTA	2880
TTGCTTATTAGTATTTCACTCCATAACCCCTTTTTTCTGCTAAAACCTACTTTTTTATATT	2940
TGTAAAATAATTGGCAGAGTGAGAAGAAACATAAAATCAGATAAGGCAAATGTGTACCTG	3000
TAAGGAATTTGTACTTTTTTATAATGCCAGTGATTAGTGAGTATTTCCCTTTTGCCAGT	3060
TGACAAGATTTTTTCCACCCTCGAGCAGCGTGAGAGATGCCTCTTTAACACTTGAAATTCA	3120
TTTCTATCTGGATACAGAGGCAGATTTTTCTTCATTGCTTAGTTGAGCAGTTTGTTTTGC	3180
TGCCAACCTGTCTCCACCCCTGTATTTCAAGATCATTGATAAGCCCTAAATTCAAATTCT	3260
TAAGATATGGACCTTTTATTGAAAATATCACAAGTTCAGAATCCCTATACAATGTGAATA	3300
TGTGGAAATAATTTCCAGCAGGAAGAGCATTATATTTCTTTGTACCAGCAAATTAATT	3360
TAACCTCAACTCACATGAGATTTAAATTCTGTGGCGTGTAGTATGCCATCATTGTGACTGA	3420
ATTTGTGCAATGGTTTTCTTAATTTTTTTTACTGTATTTTAAAGATGTTTTACATAAATCAA	3480
TAAAATGAAATGACTTAAATTGCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	3540
A (SEQ ID NO:1)	3541

Fig. 1B

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CCATTTTGTGCACCTTGATCAAAGCCCATGTCTACTAGGCCCCAGCACCTCTGCACCCCA	60
TAAAGATTGCACGCTCTTTTTCCATCAGGGGTCGTACCATGGCTGCCGCTGAGGTCCCT	120
GTCCCTTCTGGGTACTTCACCCAGATCAAAGAGCAGAAGTTGAAGCCTGGAGACCTAGAG	180
GAGGAGAAAAGAGGAGGACGGGGTACAAAGAGTGAAGCCAGGAGGGAGTTGTCAAGGAG	240
GTGGAGGCCGAGAACAGTTGCCTGCTTCTGGAGGCCAGGGCCCCGGTGGAGAGCGACAGG	300
CGGATCCTGACCCCTGCAAACGGTGCACCTGGAGTCCAGGATGTGCACCTACAGGGGCTG	360
GGATGGCTGAGCGTGCCACACTCTGAGGAGCTTTAGGGACGGTACCAGAGGCGGAAGGC	420
ATACTGCAGTTGCCATCCGTGCTGTGGCTCGACCCAGAGCCCCAGCTCAGCCTTCAGCAT	480
TGCGTGACGGTCAGCATCCCGGAAGAGCTGTACCCACCAGAGGAGCTGCAGCGGATACAT	540
TTTCACCTGCTGAGAGAGAATGTGCTAATGGCCGAGGAGAAGCCAGAGTTAACACCAGAC	600
TTGGACGAAAAGCACAGCCCTGAAAAAGCCCCGAAGAAGATGAAAAGGACCAGCTCCCGCCC	660
CAGGGAGAGACAGACAAGAGAGAAGAGAGGTTGCTCCTTCTGGAAATGAAACCAAAAGAG	720
GGAAAAGACGACGAAATTGTCTTGACCATTTCCCATCTAAGCCTCGAAGAACAGCAAGAT	780
CCACCAGCGGCCAATCAGACAAGTGTGCCGGGAGCCAAAGCCGCAAAACCAAAACGGCGG	840
AGGCAGACCAAGGGAAAGCCTCAGAGCTTTAGTGTGACACCTGCCCGTTCACTTCTCTCC	900
AAGCTCTCAACTTTCAATCGTCACATCAAATTCACAGCAATGAGAGGCCACACCTGTGT	960
CACCTGTGCCTGAAGGCCCTTCCGGACTGTCACTCTTCTTAGGAACCATGTGAACACCCAC	1020
ACAGGAACCAGGCCCCACAAGTGCAGGGACTGCGACATGGCGTTTGTACCAGCGGAGAA	1080
CTCGTCCGGCACAGGCGTTACAAACACACTTATGAGAAGCCCTTCAAGTGCTCCCTGTGC	1140
AAGTACGCCAGCGTCGAGGCAAGCAAGATGAAGCGTCACATCCGCTCACACACGGGTGAG	1200
CGTCCCTTCCAGTGTGTGCCAGTGTGCTTATGCCAGCAGGGACTCCTACAAGCTGAAGCGC	1260
CACATGAGGACACACTCAGGTGAGAAGCCGTATGAATGTCCCACCTGTACGTCCGGTTC	1320
ACCCAGAGCGGGACCATGAAAATCCATATAGCACAGAAGCACGGAGAGAATGTGCCCCAA	1380
TACGAGTGTCCCCACTGTGCCACCATCATCGCGAGGAAGAGCGACCTGCGTGTCCATCTG	1440
CGTAACCTGCACAGCCAGAGCCCGGAGGAGATGAAGTGCCGATACTGTCCCGCTGGCTTC	1500
CATGAGCGCTATGCCCTCATTACAGCACCAGAGGACCCACAAGAACGAGAAGAAGTTCAAG	1560
TGCAAGCAGTGCGATTACGCGTGCAAGCAGGAGCGATGCTTGAAGGCGCACATGCGCATG	1620
CACACAGGAGAGAAGCCCTTCTCCTGCCTGGCCTGCAACAAGCACTTCCGACAGAAGCAG	1680
CTACTGACCGTGCACCTGAGGAAGTACCATGACCCGAACCTTCGTCCCCAATCTGCACCTG	1740
TGCCTCAAGTGTGATAAACGTTTCTCCCGCTGGAGTAACCTGCAGAGACACAGAAAGAAG	1800
TGTGACCCGGAGCATGAGACGTTAGCCCCCAACAAGGACAGGAGACCAGTGACAAGGACA	1860
CAGGCCTCGGAGGGGAGAAGCAGGACACAAGGAAGGGGAGCCTCAGTGCCCTGGGGAGCAG	1920
GCTCTGGGCCACCAAGGAGAAGCAGCGGGGAGCCAGAGCCCAGACCACGGCCTTACCTGC	1980
GAGATGATCTTTAATCATGATGGATAAGTGATGGATAAGTGAGCAGTCGTGCCTCTCCGTG	2040
CAGTGGCCTCTGGGGGAAGAAACAGTTAGAAATAAGTTCCAGACACAGCACAGTGTTTC	2100
TCAGAGTTTGAGATAGTGTGTAGAAATGTTTGAGAGAAGGGGAAAAAACCTGCAGCTA	2160
TTTCCAAAGACTTGAGTCAGAGCTCGAAGTGAAGGTGCACATATCTGGGCCCTAGCAGGT	2220
GCCCAGAATGAGTCAGGGACAGATTCTAGGTGATACTTATGTCCACGGGGGCTCAGACCA	2280
GTTAACGCCTTGGTGGTCAGAGCAGAAAATTTTTTGAGTTGTTGTACCCACCCTCAA	2337

(SEQ ID NO:3)

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Fig. 2A

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MAATEISVLSEQFTKIKELELMPEKGLKEEEKDGVCREKDHRSPELEAERTSGAFQDSV	60
LEEEVELVLAPSESESEKYILTLQTVHFTSEAVELQDMSLLSIQQQEGVQVVVQPGPGLL	120
WLEEGPRQSLQQCVAISIQQELYSPQEMEVLOFHALEENVMVASEDSKLAVSLAETAGLI	180
KLEEEQEKQQLLAERTKEQLFFVETMSGDERSDEIVLTVSNSNVEEQEDQPTAGQADAEK	240
AKSTKNQRKTGKAGGTFHCDVCMFTSSRMSSFNRHMKHTHTSEKPHLCHLCLKTFRTVTLL	300
RNHVNTHTGTRPYKCND CNMAFVTS GELVRHRRYKHTHEKPFKCSMCKYASVEASKLKRH	360
VRSH TGERPFQCCQCSYASRD TYKLKRHMRTHSGEKPYECHICHTRFTQSGTMKIHLQK	420
HGENVPKYQCPHCATIIARKSDLRVHMRNLHAYSAAELKCRYCSAVFHERYALIQHQKTH	480
KNEKRFKCKHCSYACKQERHMTAHIRTHTGEKPFTCLSCNKCFRQKQLLNAHFRKYHDAN	540
FIPTVYKCSKCGKGF SRWINLHRHSEKCGSGEAKSAASGKGRRTKRKQTILKEATKGQK	600
EAAKGWKEAANGDEAAAEASTTKGEQFP GEMFPVACRETTARVKEEVDEGVTCEMLLNT	660
MDK (SEQ ID NO:2)	663

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Fig. 2B

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MAAAEVPVPSPGYFTQIKEQKLKPGDLEEEKEEDGVQRVEAQEGVVKEVEAENSCLLLEAR	60
APVESDRRILTLQTVHLESQDVHLQGLGWLSVPHSEELSGTVPEAEGILQLPSVLWLDPE	120
PQLSLQHCVTVSIPPELYPPEELQRIHFHLLRENVLMAEENPELTPDLDESTALKKPEED	180
EKDQLPPQGETDKREERLLLLLEMKPKEGKDDEIVLTISHLSLEEQQDPPAANQTSVPGAK	240
AAKPKRRRQTKGKPQSFQCDTCPFTSSKLSTFNRHIKHSNERPHLCHLCLKAFRTVTLL	300
RNHVNTHTGTRPHKCRDCDMAFVTSGELVRHRRYKHTYEKPFKCSLCKYASVEASKMKRH	360
IRSHTGERPFQCCQAYASRDSYKLKRHMRTSHGKPYECPCHVRFTQSGTMKIHIAQK	420
HGENVPKYECPHCATIIARKSDLRVHLRNLHSQSPEEMKCRYCPAGFHERYALIQHORTH	480
KNEKKFKCKQCDYACKQERCLKAHMRMHTGEKPFSCACNKHFRQKQLLTVHLRKYHDPN	540
FVPNLHLCLKCDKRFSRWSNLQRHRKKCDPEHETLAPNKDRRPVTRTQASEGEAGHKEGE	600
PQCPGEQALGHQGEAAGSQSPDHGLTCEMIFNMMDK (SEQ ID NO:4)	636

CAGGGTAAAGCAGGGGGCCCTGCCAGGCCTCCGAGGGAGTGTGCTTGGTCTGGCCGAGGGC 60
 TGCTTGGCCAAAGTCTGGGTGGGCTCGAGGGCCACTAGGCCCAAAGCCTGCCTGGCTCTGAG 120
 GGTGCTAGGTCTAGAACCGTGCACGAGGGGAATGCCTGCTCGGGCCCCGAACCTCGCTGGG 180
 CGCCGGGTGTGCACTGGCCCCGGGGCCTGCTTGGACCTGAAACTTGTAGGCCCAGGATAT 240
 GCACTGGCCGAGAGCCTTAACTTGGGCCCAAACCTTACTAGGCCCAGGATGTTCACTGACTGA 300
 ACCGGCTCAGAGCCTAACCTTGTAGGCCCAGGATATGCACTGGGCCAGAGTGTGCTCAGG 360
 CGGAACCTTGGCAGGCGCAGGATGTGTGCTGGCCCTAAGCCTGCTGAGGCCCAAACCTGT 420
 TCGTTCTAGGGTTTTGTACAAAATCCTGCTTTAGCCTAAATCCTGCTTAGCCTTGACCCC 480
 CTCCTAGACCCAAGCCAGATCAGCATTGTTCTGACCCTACTAAGTCCAAAACCTTTTGAG 540
 GCCAGACCTTGTTTCAACTCCAAAGCCTGCTAGGTTCCAGCACCCCCCGCATCCCTCCTC 600
 ATACCACCCCTTCTCCCCCCTATGGAACCGCTTGCTTATTTTTCAAACAGGCCAAGTC 660
 ATTatggcagccactgagatctctgtcctttctgagcaattcaccaagatcaaagaactc 720
 1 M A A T E I S V L S E Q F T K I K E L
 gagttgatccggaagcctgaaggaggaggaagcagcagtgagtgagagagagaaa 780
 20 E L M P E K G L K E E K D G V C R E K
 gaccatcggagccctagtgtgaggccgagcgtacctctggggccttcaggacagc 840
 40 D H R S P S E L E A E R T S G A F Q D S
 gtcctggaggaagaagtggagctgggtgctggccccctcggaggagagcgagaagtacatc 900
 60 V L E E E V E L V L A P S E E S E K Y I
 ctgaccctgcagacggtgcacttcacttctgaagctgtggagttgcaggatatgagcttg 960
 80 L T L Q T V H F T S E A V E L Q D M S L
 ctgagcatcacagcagcaagaaggggtgcaggtgggtggtgcaacagcctggccctgggttg 1020
 100 L S I Q Q Q E G V Q V V Q Q P G P G L
 ctgtggccttgaggaaagggccccggcagagcctgcagcagtggtgtggccattagtatccag 1080
 120 L W L E E G P R Q S L Q Q C V A I S I Q
 caagagctgtactccccgcaagagatggaggtgttgagttccacgctctagaggagaat 1140
 140 Q E L Y S P Q E M E V L Q F H A L E E N
 gtgatgggtggccagtgaaagacagtaagtttagcggtagcctggctgaaactgctggactg 1200
 160 V M V A S E D S K L A V S L A E T A G L
 atcaagctcgaggaagagcaggagaagaaccagttattggctgaaagaacaaaggagcag 1260
 180 I K L E E E Q E K N Q L A E R T K E Q
 ctcttttttggaaacaatgtcaggagatgaaagaagtgcgaaattgttctcacagtt 1320
 200 L F F V E T M S G D E R S D E I V L T V
 tcaaatcaaatgtggaagaacaagaggatcaacctacagctgggtcaagcagatgctgaa 1380
 220 S N S N V E E Q E D Q P T A G Q A D A E
 aaggccaaatctacaaaaaatcaaagaaagacaaagggagcaaaaggaaccttccactgt 1440
 240 K A K S T K N Q R K T K G A K G T F H C
 =
 gatgtctgcatgttcacctcttctagaatgtcaagttttaatcgctcatatgaaaactcac 1500
 260 D V C M F T S S R M S S F N R H M K T H
 ===== ZF1 =====
 accagtgagaagcctcacctgtgtcacctctgcctgaaaaccttcctgacgggtcactctg 1560
 280 T S E K P H L C H L C L K T F R T V T L
 ===== ZF2 =====
 ctgcggaaccatgtttaacacccacacaggaaccaggccctacaagtgtaacgactgcaac 1620
 300 L R N H V N T H T G T R P Y K C N D C N
 =====
 atggcatttgtcaccagtgagaaactcgctccgacacaggcgctataaacataactcatgag 1680
 320 M A F V T S G E L V R H R R Y K H T H E
 ===== ZF3 =====
 aaaccctttaaatgttccatgtgcaagtatgccagtggtggaggcaagtaaattgaagcgc 1740
 340 K P F K C S M C K Y A S V E A S K L K R
 ===== ZF4 =====
 catgtccgatcccacactggggagcgcccccttcagtggtgagcagctatgccagc 1800
 360 H V R S H T G E R P F Q C C Q C S Y A S
 =====
 agagatacctacaagctgaaacgccacatgagaacgcactcaggtgagaagccttacgaa 1860
 380 R D T Y K L K R H M R T H S G E K P Y E
 ===== ZF5 =====
 tgccacatctgccacacccgcttcacccagagcgggaccatgaaaatacatattctgcag 1920
 400 C H I C H T R F T Q S G T M K I H I L Q

==== ZF6 =====
 420 aaacacggcgaaaatgtccccaataaccagtgccccattgtgccaccatcattgcacgg 1980
 K H G E N V P K Y Q C P H C A T I I A R
 =====
 440 aaaagcgacctacgtgtgcatatgcgcaacttgcatgcttacagcgctgcagagctgaaa 2040
 K S D L R V H M R N L H A Y S A A E L K
 ===== ZF7 =====
 460 tgccgctactgttctgtgtcttccatgaacgctatgccctcattcagcaccagaaaact 2100
 C R Y C S A V F H E R Y A L I Q H Q K T
 ===== ZF8 =====
 480 cataagaatgagaagaggttcaagtgcacactgcagttatgcctgcaagcaggaacgt 2160
 H K N E K R F K C K H C S Y A C K Q E R
 = ===== ZF9 =====
 500 catatgaccgctcacattcgtacccacactggagagaaaccattcacctgcctttcttgc 2220
 H M T A H I R T H T G E K P F T C L S C
 =====
 520 aataaatgtttccgacagaagcaacttctaaacgctcacttcaggaaataccacgatgca 2280
 N K C F R Q K Q L L N A H F R K Y H D A
 ===== ZF10 =====
 540 aatttcatcccgactgtttacaaatgctccaagtgtggcaaaggcttttcccgctggatt 2340
 N F I P T V Y K C S K C G K G F S R W I
 ===== ZF11 =====
 560 aacctgcacagacattcggagaagtgtggatcaggggaagcaaagtcggctgcttcagga 2400
 N L H R H S E K C G S G E A K S A A S G
 =====
 580 aaggggaagaagaacaagaagaggaagcagaccatcctgaaggaagccacaaagggtcag 2460
 K G R R T R K R K Q T I L K E A T K G Q
 600 aaggaagctgcgaagggatggaaggaagccgcgaacggagacgaagctgctgctgaggag 2520
 K E A A K G W K E A N G D E A A A E E
 620 gcttccaccacgaagggagaacagttccaggagagatgtttcctgtcgcctgcagagaa 2580
 A S T T K G E Q F P G E M F P V A C R E
 640 accacagccagagtcaaagaggaagtggatgaaggcgtgacctgtgaaatgctcctcaac 2640
 T T A R V K E E V D E G V T C E M L L N
 660 acgatggataagTGAGAGGGATTCCGGTTGCGTGTTCCTGCCCCCAATTCCTAAAGCAA 2700
 T M D K
 GTTAGAAGTTTTTAGCATTTAAGGTGTGAAATGCTCCTCAACACGATGGATAAGTGAGAG 2760
 AGAGTCAGGTTGCATGTTCACTGCCCCCTAATTCCTAAAGCAAGTTAGAAATTTTTAGCAT 2820
 TTTCTTTGAAACAATTAAGTTTCATGACAATGGATGACACAAAGTTTGAGGTAGTGTCTAGA 2880
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 CAAGGTGGCCCCACAATGAGTGAGTAGTGATTTTGGATATTTCAAATAGTCTAGACCAG 3060
 CTAGTGCTTCCACAGTCAAAGCTGGACATTTTTATGTTGCATTATATACACCCATGATAT 3120
 TTCTAATAATATATGGTTTTTAACATTAAAGACAAATGTTTTTATACAAATGAATTTTCT 3180
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 GGAATAAATCGATTTTACTTTGGTATAGGAGCAAGGTTACCTTTAGATTTTGTATTCT 3360
 CTTTTAATTATGCTCCTTGGCAGGTATGAAATTGCCCTGGTTACATTCCATTATTGCTTA 3420
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 TAATTGGCAGAGTGAGAAGAAACATAAAATCAGATAAGGCAAATGTGTACCTGTAAGGAA 3540
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 ATAATTTCAGCAGGAAGAGCATTATATTCTTTGTACCAGCAAATTAATTTAACTCA 3900
 ACTCATGAGATTTAAATTTCTGTGGGCTGTAGTATGCCATCATTTGTGACTGAATTTGTG 3960
 CAATGGTTTCTTAATTTTTTTTACTGTTATTTAAAGATGTTTTTACATAATTCAATAAATG 4020
 AAATGACTTAAATTTGCAA 4080

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Fig. 3B

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MAATEIS-VLSEQFTKIKELELMPEKGLKEEEKDGVCREKDHRSPESEEAERTSG	54
MEGDAVEAIVEESETFIKGERKTYQRRREGGQEDACHLPQ-----NQTDG	47
-----AFQDSVLEE-----EV-ELVLAPSEESE---KYILTLQTVHFT	127
GEVVQDVNSSVQVMMEQLDPTLLQMKTEVMEGTVAPEAAVDDTQIITLQVVMME	104
SEAV---ELQDMSLLSIQQQEGVQVVVQQPGPGLLWLEEGPRQSLQQCVAISIQQELYSPQ	145
EQPINIGELQ-----LVQVPVPVTVV-VATTSSVEE-----LQGAYENEVSKEGLAES	150
EMEVLQFHAALEE--NVMVASEDSKLAVSLAETAGLIKLEEEQEKN----QLLAERTKEQLFFVE	163
--EPMICHTLPLPEGFQVVKVGANGEVETLEQGELPPQEDPSWQKDPDYQPPAKKTKKTKKSKL	212
TMSGDERSDEIVLTVSNSNVEEQEDQPTAGQADAeka-----KSTKNQRKTKGAKGT	256
RYTEEGKD----VDVSVYDFEEEQQEGLLSEVNAEKVVGNMKPPKPTKIKKKGVKKT	265
FHGDVCMETSSRMSSEFARHMKRTSEKPHLCHECLKGERWTLERNHVNHHTGTRP	312
FOCELCSYICGERSNEDRHKSTDERPHKCHCGRAERTVWHLERNHVNHHTGTRP	321
YKENDGNMAFVTSGETVHRRMKH THEKPFKESMCKQASVVEASKLGHVHSTGERP	369
HKCPDCDMAFVTSGETVHRRMKH THEKPFKESMCKQASVVEASKLGHVHSTGERP	378
FOCCGCSYASRDVYKCHGRHMTS GEEKPYECHICHIRETOSCTMKHHTLOK GENVPK	427
FOCSLCSYASRDVYKCHGRHMTS GEEKPYECHICHIRETOSCTMKHHTLOK TENVAK	436
YQCPHCAMETARKSDIRVIMRNHAYSAAELKCRMCSAVTHEPVAHIOHOKTHKNEKR	485
FHCPHCMTVARKSDEGVHHRKH SYIEQGKKCRMYCDVETHERYALIOHOKSHKNEKR	494
FKCKHCSYACKOERHMTAHERRTTGEKPFTGESCNKCFROKOLENAHERRYVDANFIPTV	545
FKCQCCDYACROERHMTMHRTH TGEKPYACSHCDIGEROKOLEMDMHEKRMHDPNFVPAA	554
YKCSKCKGKESRWNTLRHSEKCGS-----GEAKSAASGKGRRTKRKQTILKEATKGQKE	601
FVCSKCKGKESRWNTLRHSEKCGSAGPDGVEGENGGETKKS KRGRKRKMRSKKEDSSDSEN	614
AAKGWKEAANGDEAAAEASTTKGEQFPGEMFPVACRETTAR-----	643
AEPDL--DDNEDEEPEPAVEIEPEPEPQPVTPAPPPAKKRRGRPPGRITNQPKQNQP	667
-----VKEEVDEGVTCEMLLNTMDK	663
TAIIQVEDQNTGAIENIIVEVKKEPDAEPAEGEEEAQPAATDAPNGDLTPMILSMDR	727

Fig. 3C

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MAAAEVPYPSGYETQKEQKIKPGDLEEEKEEDGVORVIAQEGVVKEVEAENSCLLLEAR	60
MAAHEISVLSEQETKKELELMPEKGLKEEKKGVCR-EKDHRSPSELEAERTSGAFOQS	60
-----AEV-ESDRRIITLQTVHLESODVHIGLGLTSPHSEETSGTVPEAEGIL	120
VLEEEVELVLASEESEKVIITLQTVHETSEAVELQDMSHLSIQQQEGVQ-VVVQQPC--	109
QLPSVWVLPPEQLSTOHEVTVSTPEELYPPEETQRTHEHLRENVLMAEENPETTPDD	180
--EGLLWLEEGEROSECOQVATSTQOELYSQOEMEVLOEHALEENVVASEDSKLAVSLA	167
ESTAT--KKPEDEKDOEPPOGETDKREERIEETEMKPKKEGKDDERVTISHLSLEECQDP	239
ETAGLILLESQERNQ-----LAERTKEQDERVETMSGDEESDETVLTVSNSNVEEQEDQ	221
ZF1	
PADNOLSVPGAKYAKPKRRROTKGKPOSEQCTCPETSSGLSTENRHKKIHSNERPHI	297
ETAGADAERKAKSTKNORK--TKGAKGTEHCEVCMETSSRMSSENRHMKTHISEKPHI	277
ZF2	
ZF3	
CHICETGAPVITLERNHVNTHICTRPHKCRBCDMATVTSGREVHRHRYKHITYEKPFK	354
CHICETGAPVITLERNHVNTHICTRPHKCRBCDMATVTSGREVHRHRYKHITYEKPFK	334
ZF4	
ZF5	
CSICKVASVEASKMKRHTRSHITGERPFCQQCAVASRDSMKLKRHMRTHSGEKPYE	410
CSMKVASVEASKMKRHTRSHITGERPFCQQCAVASRDSMKLKRHMRTHSGEKPYE	390
ZF6	
ZF7	
CPTCHVRETOSGTMKCHILAKHGENVPKGGCPHCATHTARKSDLRVHMRNTHSOSPEEMK	470
CHICHTRETOSGTMKCHILAKHGENVPKGGCPHCATHTARKSDLRVHMRNTHSOSPEEMK	450
ZF8	
ZF9	
CRYCPAGTHERYATICHORHKNKKKCKQCDVAGKQERCKAHMRMHTGEKPFK	526
CRYCPAGTHERYATICHORHKNKKKCKQCDVAGKQERCKAHMRMHTGEKPFK	506
ZF10	
ZF11	
CLACNKHROKQILTVHLRGVHDPNEVNTIHLCLKDKRESRWSNTQRHRKCDP-	581
CLSCNKCEROKQILNAHERKYHDANEETVYKCSKCGGGSRWINTHSEKCGSG	562
EHETLAPNKDPRPVTRTOASEGEAGHKEGEPOCP-----	615
EAKGAASGGRTRKIKOTILKEATKGQKEAAKGWKEAANGDEAAAEASTTK	615
GEQALGHQGEAAGSOSP-----DHGLTCEMIFNMMDK	647
GEQFPCEMFPVARETTARVKEEVDEGVCEMIFNMMDK	654

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468 H E R Y A L I Q H Q R T H K N E K K F K
=====ZF8=====

tgcaagcagtgcgattacgcgtgcaagcaggagcgatgcttgaaggcgacatgcgcatg 1620

488 C K Q C D Y A C K Q E R C L K A H M R M
=====ZF9=====

cacacaggagagaagcccttctcctgcctggcctgcaacaagcacttccgacagaagcag 1680

508 H T G E K P F S C L A C N K H F R Q K Q
=====ZF10=====

ctactgaccgtgcacctgaggaagtaccatgacccgaacttcgtccccaatctgcacctg 1740

528 L L T V H L R K Y H D P N F V P N L H L
=====

tgcctcaagtgtgataaacgtttctcccgtggagtaacctgcagagacacagaaagaag 1800

548 C L K C D K R F S R W S N L Q R H R K K
=====ZF11=====

tgtgacccggagcatgagacgttagcccccaacaaggacaggagaccagtgacaaggaca 1860

568 C D P E H E T L A P N K D R R P V T R T
=====

caggcctcggaggggagaagcaggacacaaggaaggggagcctcagtgccttggggagcag 1920

588 Q A S E G E A G H K E G E P Q C P G E Q
gctctggggccaccaaggagaagcagcggggagccagagcccagaccacggccttacctgc 1980

608 A L G H Q G E A A G S Q S P D H G L T C
gagatgatctttaacatgatggataagTGATGGATAAGTGAGCAGTCGTGCCTCTCCGTG 2040

628 E M I F N M M D K
CAGTGGCCTCTGGGGGAAGAAACCAGTTAGAAATAAGTTCCCAGACACAGCACAGTGTTC 2100
TCAGAGTTTGAGATAGTGTGTAGAAATGTTTGAGAGAAGGGGAAAAAACCCCTGCAGCTA 2160
TTTCAAAGACTTGAGTCAGAGCTCGAAGTGAAGGTGCACATATCTGGGCCCTAGCAGGT 2220
GCCCAGAATGAGTCAGGGACAGATTCTAGGTGATACTTATGTCCACGGGGGCTCAGACCA 2280
GTTAACGCCTTGGTGGTCAGAGCAGAAAATTTTTTGAGTTGTTGTACCCACCCTCAA 2340

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Fig. 4A

ForN1	GAGCCTGTGGAGCGATTAAACC	(SEQ ID NO:6)
RevN1	CCGCCGCCGCTCCAC	(SEQ ID NO:7)
ForN2	CTTCTTTGGCGGCAGCGGCG	(SEQ ID NO:8)
RevN2	CGCGCCACACCCCCCGC	(SEQ ID NO:9)
ForN3	CCCCAGAACCAGAC	(SEQ ID NO:10)
RevN3	ACTTCAGTCTTCATCTG	(SEQ ID NO:11)
ForZF1	TGTGAGCTTTGCAGTTACAC	(SEQ ID NO:12)
RevZF1	ACTGTTCTGAATGCCCTG	(SEQ ID NO:13)
ForZF2	CGGCGTTCAAATTTGG	(SEQ ID NO:14)
RevZF2	CGAGTACCTGTGTGTGTGTT	(SEQ ID NO:15)
ForZF3	GTGCCCAGACTGCGA	(SEQ ID NO:16)
RevZF3	AATCGCACATGGAACAC	(SEQ ID NO:17)
ForZF4	TTCAAGTGTTCCATGTG	(SEQ ID NO:18)
RevZF4	CTGCTGGCATAACTGCAC	(SEQ ID NO:19)
ForZF5	CACATACAAGCTGAAAAGG	(SEQ ID NO:20)
RevZF5	GCATCTTCATGGTACCAC	(SEQ ID NO:21)
ForZF6	GTCATAGCCCGAAAAAGTG	(SEQ ID NO:22)
RevZF6	CGCTCATGAAACACAGC	(SEQ ID NO:23)
ForZF7	GTGTGACCAGTGTGATTA	(SEQ ID NO:24)
RevZF7	TTCTGGCGGAAGGTCTT	(SEQ ID NO:25)
ForZF8	CAAGCGCTATCACGACC	(SEQ ID NO:26)
RevZF8	TCTGCATGTCTTGCCAT	(SEQ ID NO:27)
ForC1	TCCTCTGACAGTGAAAATGC	(SEQ ID NO:28)
RevC1	CACAGGCTGAGGCTCTGG	(SEQ ID NO:29)
ForC2	CAGAATACAGGTGCAATTG	(SEQ ID NO:30)
RevC2	CACCGGTCCATCATGCTG	(SEQ ID NO:31)
NEWTCFOR	GCCAGTGTGGAGGCAAGTAAATTGAAG	(SEQ ID NO:32)
NEWTCREV	CACTGGCAACACTGAAAGGGGCGCTCCCC	(SEQ ID NO:33)

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Fig. 4B

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MB1FOR	TCGTCATATGAAAACTCACACC	(SEQ ID NO:34)
MB1REV	GACGAGTTCTCCACTGGTG	(SEQ ID NO:35)
MB2FOR	AACATACTCATGAGAAACCC	(SEQ ID NO:36)
MB2REV	GAGTGC GTTCTCATGTGG	(SEQ ID NO:37)
MB3FOR	GAGCGCCCCCTTTCAGTGT	(SEQ ID NO:38)
MB3REV	GCACAATGGGGACAC	(SEQ ID NO:39)
MB4FOR	ACCCAGAGCGGGACCATGAAA	(SEQ ID NO:40)
MB4REV	GACAGCAGAACAGTAGCGG	(SEQ ID NO:41)
MB5FOR	CATAAGAATGAGAAGAGG	(SEQ ID NO:42)
MB5REV	AAGTTGCTTCTGTGCGAAA	(SEQ ID NO:43)
MBNEWFOR	TTGTGCAGTTATGCCAGCAGG	(SEQ ID NO:44)
MBNEWREV	GTGCTTCTGTAAAATGTGCATC	(SEQ ID NO:45)